In the Claims

- 1. (currently amended) A method for dynamically allocating bandwidth to
- 2 traffic having a variable data rate in a network, comprising:
- measuring a data rate of the traffic received from the network during
- 4 fixed length time intervals;
- 5 grouping a-predetermine predetermined number of consecutive data
- 6 rates into overlapping vectors;
- 7 applying a discrete wavelet transform to each overlapping vector to
- 8 determine frequency bands for each vector;
- analyzing the frequency bands of each vector to determine an
- 10 associated energy of the data rate; and
- allocating the bandwidth to the traffic according to the associated
- 12 energy when the traffic is transmitted.
- 1 2. (original) The method of claim 1 wherein the bandwidth is allocated in a
- 2 weighted fair queuing process.
- 1 3. (original) The method of claim 1 wherein the bandwidth is allocated in a
- 2 quality-of-service management block of the network.
- 1 4. (original) The method of claim 1 wherein a clock sets time intervals
- $\sum_{n} \delta(t nT) \text{ at a clock rate of } \frac{1}{T} \text{ for a data counter.}$

- 1 5. (currently amended) The method of claim 1 wherein the predetermine
- 2 <u>predetermined</u> number of consecutive data rates are grouped into the
- 3 overlapping vectors in a shift register of length eight.
- 1 6. (original) The method of claim 1 wherein the discrete wavelet transform is
- 2 performed by a Haar wavelet filter bank.
- 1 7. (original) The method of claim 1 further comprising:
- 2 receiving buffer statistics and a minimum non-zero data rate as
- 3 feedback while allocating the bandwidth.
- 8. (original) The method of claim 1 wherein each overlapping vector is in
- 2 terms of
- 3 $\underline{\mathbf{X}}_{\mathbf{k}} = [X(n-M+1) \ X(n-M+2) \ \ X(n)],$ where M is eight, and n is an instance
- 4 in time.
- 9. (original) The method of claim 1 wherein an average data rate for M
- 2 consecutive time intervals is

3
$$\underline{\mathbf{X}}_{\mathbf{k}+1} = 1/2.[X(n-M+1) + X(n-M+2) \ X(n-M+3) + X(n-M+4)$$
 $X(n-1) + X(n)]$

- 4 at a time scale of k+1, and a difference of data rates between two
- 5 consecutive time intervals is

6
$$\underline{\mathbf{Y}}_{\mathbf{k}+1} = 1/2.[X(n-M+1) - X(n-M+2) \ X(n-M+3) - X(n-M+4)$$
.... $X(n-1) - X(n)$

7 where n is a time instance, k is a time scale, and M is an integer.

- 1 10. (original) The method of claim 1 wherein the associated energy is
- 2 expressed as
- 3 $\underline{E}_{n}[E_{1,n},[E_{2,n},...,[E_{k,n}]].$
- 1 11. (original) The method of claim 1 wherein a sum of the energies in each
- 2 frequency band is bounded by a total energy of the traffic.
 - 12. (cancelled)